



Docket No.: 215140US0PCT

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313



ATTORNEYS AT LAW

RE: Application Serial No.: 09/926,367
Applicants: Christian MARZOLIN, et al.
Filing Date: June 13, 2002
For: TEXTURED SUBSTRATE CAPABLE OF FORMING
A GLAZING, METHOD FOR OBTAINING SAME
Group Art Unit: 1772
Examiner: CHEVALIER, A.A.

SIR:

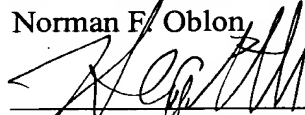
Attached hereto for filing are the following papers:

Amended Appeal Brief

Our check in the amount of -0- is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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DOCKET NO: 215140US0PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
CHRISTIAN MARZOLIN, ET AL. : EXAMINER: CHEVALIER, A.A.
SERIAL NO: 09/926,367 :
FILED: JUNE 13, 2002 : GROUP ART UNIT: 1772
RCE FILED: SEPTEMBER 30, 2004
RCE FILED: JANUARY 20, 2006
FOR: TEXTURED SUBSTRATE :
CAPABLE OF FORMING A GLAZING,
METHOD FOR OBTAINING SAME

AMENDED APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313-1450

SIR:

This is an Amended Appeal Brief in response to the Notification of Non-Compliant Appeal Brief, dated March 20, 2007.

This is an appeal of the Final Rejection dated August 21, 2006 of Claims 1, 2, 4-18, 27-31 and 61-63. A Notice of Appeal was timely filed on November 21, 2006.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Saint-Gobain Vitrage, having an address 18, avenue d'Alsace, F-92400 Courbevoie, France.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and the assignee are aware of no appeals, interferences, or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1, 2, 4-18, 27-31 and 61-63 stand rejected and are herein appealed. Claims 19-26, 32-60 and 64 stand withdrawn from consideration. Claim 3 has been canceled.

IV. STATUS OF THE AMENDMENTS

No amendment under 37 CFR 1.116 has been filed.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent Claim 1 is drawn to a hydrophobic/oleophobic substrate, comprising:
a relief;
wherein said relief consists of a low surface level and a high surface level,
said high surface level has a height not less than 1/10 of the dimensions of a plurality of motifs forming said high surface level,
wherein said dimensions are in the region of a micrometer,
wherein said height ranges between 0.1 and 10 micrometers,
wherein said high surface level represents 1 to 65% of a surface of the substrate;
wherein said substrate is hydrophobic/oleophobic, and

wherein said relief provides an angle of advance of a drop of water greater than such angle provided on a flat substrate, which is otherwise the same as said substrate but without said relief, without substantially changing the hysteresis obtained with the flat substrate.

See original Claims 1 and 3, and the specification at the paragraph bridging pages 2 and 3, combined with page 12, lines 3-5.

VI. GROUNDS OF REJECTION

Ground (A)

Claims 1, 2, 4, 6-10, 15, 17, 18, 27-31 and 61-63 stand rejected under 35 U.S.C. § 102(e) as anticipated by US 6,352,758 (Huang et al.).

Ground (B)

Claims 5, 11-14 and 16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Huang et al.

VII. ARGUMENT

Ground (A)

Claims 1, 2, 4, 6-10, 15, 17, 18, 27-31 and 61-63 stand rejected under 35 U.S.C. § 102(e) as anticipated by Huang et al. That rejection is untenable and should not be sustained.

As recited in Claim 1, an embodiment of the present invention relates to a hydrophobic/oleophobic substrate, comprising:

a relief;

wherein said relief consists of a low surface level and a high surface level,
said high surface level has a height not less than 1/10 of the dimensions of a plurality of motifs forming said high surface level,
wherein said dimensions are in the region of a micrometer,
wherein said height ranges between 0.1 and 10 micrometers,
wherein said high surface level represents 1 to 65% of a surface of the substrate;
wherein said substrate is hydrophobic/oleophobic, and
wherein said relief provides an angle of advance of a drop of water greater than such angle provided on a flat substrate, which is otherwise the same as said substrate but without said relief, without substantially changing the hysteresis obtained with the flat substrate. (Emphasis added.)

Huang et al is directed to an article, the surface of which is patterned with alternating hydrophobic areas and hydrophilic surface areas. The hydrophilic areas have a relatively high concentration of inorganic oxide particles and the hydrophobic regions have relatively lower or no inorganic oxide particles, the inorganic oxide particles being dispersed throughout a polymer in one embodiment (column 2, lines 48-57). Huang et al discloses fluoropolymers or polymeric blends containing a fluoropolymer as a preferred polymeric material therein (paragraph bridging columns 4 and 5). In another embodiment, the hydrophilic surface region has inorganic oxide particles exposed to the atmosphere and the hydrophobic surface regions are essentially without inorganic oxide particles (column 2, lines 57-62). In another embodiment, the hydrophobic regions are narrower so that the growth of dew droplets is prevented on these regions (see column 2, lines 62-67).

In dew conditions, moisture in air is forced to migrate towards the larger hydrophilic regions, without forming droplets on hydrophobic zones. There, water is spread into a thin film (column 3, lines 32-34 and column 8, lines 59-63), due to the hydrophilic nature of the larger areas. Therefore, the aim of Huang et al is to obtain a substrate wherein the water is mainly present on its surface in the form of a thin film, due to large hydrophilic areas.

Huang et al's concept is the opposite of that of the present invention. The claimed textured substrate is characterized by the formation and growth of water drops on the whole of its surface and by an improved flow of the drops, due to the **hydrophobic/oleophobic properties** of the substrate and to the particular relief present on the whole of its surface. This is clear from the description and more particularly from the examples herein, wherein the sought properties are high angles of contact of water, such as on the order of 120° , instead of the spread of the droplet into a thin layer over the surface, i.e., a very low contact angle. This analysis is corroborated by the fact that Huang et al discloses that the larger hydrophilic areas exhibit contact angles of less than 30° , most preferably less than 15° (column 9, lines 31-35).

The substrate of the present invention has excellent hydrophobic properties as shown by the angles of advance and retreat shown in the Table at page 11 of the specification. Notably, advancing angles as high as 170° and retreating angles as high as 155° can be achieved. There is no disclosure or suggestion in Huang et al that such excellent hydrophobic properties can be achieved.

In order to meet the terms of Claim 1 (and claims dependent thereon) herein, one skilled in the art would, at a minimum, have to remove the hydrophilic regions of Huang et al. If a proposed modification would render a prior art invention unsatisfactory for its

intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). See also MPEP 2143.01.

In the Final Rejection, the Examiner finds that the above-emphasized limitation of Claim 1 “is a functional limitation and is deemed to be a latent property of the prior art since the prior art is substantially identical in composition and/or structure.”

In reply, and as discussed above, the structure of Huang et al is **not** substantially identical in composition and/or structure to the presently-claimed invention.

Claim 2

Claim 2 is separately patentable since Huang et al neither discloses nor suggests any of the agents recited therein. Indeed, the only polymers disclosed in Huang et al do not contain any Si. The Examiner erroneously finds that silica is a silicone, relying on the disclosure in Huang et al at column 5, line 10. In reply, this disclosure in Huang et al relates to the hydrophilic areas therein. Nevertheless, silica is an inorganic oxide. A silicone is a silicon-containing polymer.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (B)

Claims 5, 11-14 and 16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Huang et al. That rejection is untenable and should not be sustained.

Everything stated above regarding the deficiencies of Huang et al apply herein, and are hereby incorporated by reference. Huang et al neither discloses nor suggests the subject matter of the rejected claims.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

VIII. CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending in the Final Office Action be REVERSED.

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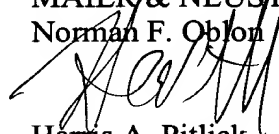
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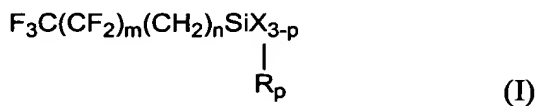
CLAIMS APPENDIX

1. A hydrophobic/oleophobic substrate, comprising:
a relief;
wherein said relief consists of a low surface level and a high surface level,
said high surface level has a height not less than 1/10 of the dimensions of a plurality of motifs forming said high surface level,
wherein said dimensions are in the region of a micrometer,
wherein said height ranges between 0.1 and 10 micrometers,
wherein said high surface level represents 1 to 65% of a surface of the substrate;
wherein said substrate is hydrophobic/oleophobic, and
wherein said relief provides an angle of advance of a drop of water greater than such angle provided on a flat substrate, which is otherwise the same as said substrate but without said relief, without substantially changing the hysteresis obtained with the flat substrate.

2. The substrate according to claim 1, wherein said substrate further comprises an agent chosen from the group consisting of:

a) silicones, and

b) compounds corresponding to the formulas:



and



where $m = 0$ to 15;

$n = 1$ to 5;

$p = 0, 1$ or 2;

R is a linear or branched alkyl group or a hydrogen atom;

X is a hydrolyzable group such as a halogeno, alkoxy, acetoxy, acyloxy, amino, or a NCO group; and

$p' = 0, 1, 2$ or 3 .

4. The substrate according to claim 1, wherein said height ranges between 0.1 and 2 micrometers.

5. The substrate according to claim 1, wherein a geometry of said relief does not display periodicity.

6. The substrate according to claim 1, wherein a geometry of said relief displays a periodicity.

7. The substrate according to claim 1, wherein said low surface level and said high surface level are connected to one another by means of at least one partition approximately perpendicular to a plane of the substrate.

8. The substrate according to claim 1, wherein said high surface level displays a continuity in at least one direction of a plane of the substrate.

9. The substrate according to claim 8, wherein said relief comprises a multiplicity of approximately identical parallelepipedal objects, said parallelepipedal objects parallel and uniformly spaced.

10. The substrate according to claim 1, wherein said high surface level does not display continuity in any direction of a plane of the substrate.

11. The substrate according to claim 1, wherein said relief comprises a multiplicity of approximately identical cylindrical craters uniformly distributed on the substrate, a multiplicity of axes of said craters approximately perpendicular to a plane of the substrate.

12. The substrate according to claim 1, wherein said relief comprises a discrete series of identical or different objects.

13. The substrate according to claim 12, wherein said discrete series of identical or different objects consists of a plurality of cylinders with axes approximately perpendicular to a plane of the substrate.

14. The substrate according to claim 13, wherein said relief comprises a multiplicity of approximately identical cylinders of revolution uniformly distributed on the substrate.

15. The substrate according to claim 1, wherein said relief is based on at least one compound of at least one of the elements selected from the group consisting of Si, W, Sb, Ti, Zr, Ta, V, Pb, Mg, Al, Mn, Co, Ni, Sn, Zn, In, a plastic and a plastic containing a filler, said compound optionally hardened by means of application of an energy source, or a thermoplastic, and wherein at least one underlying portion of the substrate is composed of a glass, a plastic or combination thereof.

16. A substrate according to claim 1, wherein said substrate is a conductor of electricity.

17. The substrate according to claim 1, wherein said substrate has anti- reflecting properties.

18. The substrate according to claim 1, wherein said substrate has anti- staining properties.

27. A glazing comprising a substrate according to claim 1.

28. A building trade or street furnishing, comprising: the glazing according to claim 27.

29. An air, marine or land transportation vehicle, comprising: the glazing according to claim 27.

30. A screen, a lamp or an electronic display, comprising: the glazing according to claim 27.

31. A furnishing or household electrical appliance, comprising: the glazing according to claim 27.

61. The substrate according to claim 1, wherein said height ranges between 1 and 10 micrometers.

62. The furnishing or household electrical appliance according to claim 31, which is a refrigerator, a shelf, a shower partition, a refrigerator door, an oven door, a display case, or a vitreous ceramic plate.

63. An article, comprising:
the glazing according to Claim 27.

EVIDENCE APPENDIX

None.

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RELATED PROCEEDINGS APPENDIX

None.